**Videos 13G – Combined Gas Law Name**

Re writing the ideal gas law: $\frac{P\_{1}V\_{1}}{n\_{1}T\_{1}}= \frac{P\_{2}V\_{2}}{n\_{2}T\_{2}}$

What must be true about Temperature and Pressure (and volume too):

Example – A nitrogen cylinder contains 3.42 kg of nitrogen at 2000. psi absolute and 20.0 oC. What is the pressure if the temperature is 150. oC, but you have released 0.20 kg of nitrogen? (2718 psi ≈ 2720 psi)

Whiteboards: (These are solved on the website in the videos linked after the main one)

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| 1. An airtight drum at 1.00 atm and 10.0 oC is heated until it reaches a pressure of 1.15 atm. What is the new temperature in oC? (52.5 oC) | 2. An airtight cylinder has a pressure of 162 Jukkalas when the piston is 14.5 cm from the bottom. What is the pressure if the piston is moved to 17.2 cm from the bottom of the cylinder? (Assume that the temperature is the same) (137 Jukkalas ) |
| 3. A tyre is at 82 kPa gauge pressure when the temperature is 10.0 oC . What is the gauge pressure if the temperature is 52 oC (assume the volume remains constant, and that the tyre does not leak)(211 kPa Absolute, 109 kPa Gauge) | Draw a very happy timberwolf eating with knife and fork in this space: |